SSC CGL Tier-2 11th-September-2019 Quant

Instructions

For the following questions answer them individually

Question 1

The value of $\frac{7+8\times8\div8\ of\ 8+8\div8\times4\ of\ 4}{4\div4\ of\ 4+4\times4\div4-4\div4\ of\ 2}$ **is:**

A 7.8

B 4.6

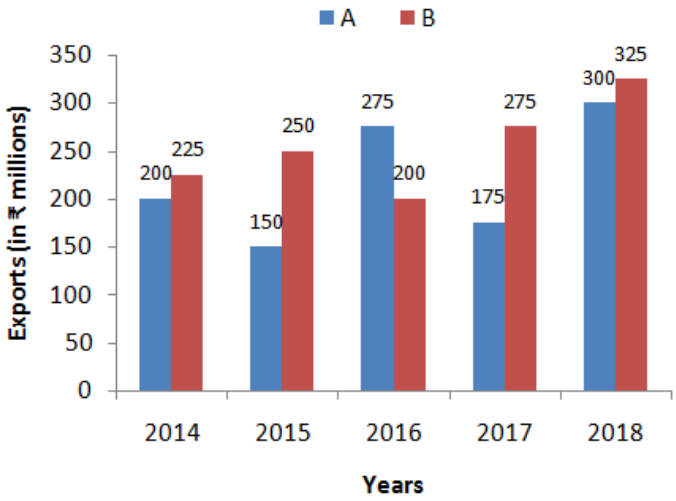
C 8.7

D 6.4

Answer: D

Question 2

The bar graph shows the exports of Cars of Type A and B (in ₹ millions).



In which year, the exports of cars of type A was 10% more than the average exports (per year) of cars of type A over the five years?

A 2015

B 2017

C 2014

D 2016

Answer: C

Question 3

If $\sin\theta = \sqrt{3}\cos\theta, 0^\circ < \theta < 90^\circ$**, then the value of** $2\sin^2\theta + \sec^2\theta + \sin\theta\sec\theta + \operatorname{cosec}\theta$ **is:**

A $\frac{33+10\sqrt{3}}{6}$

B $\frac{19+10\sqrt{3}}{6}$

C $\frac{33+10\sqrt{3}}{3}$

D $\frac{19+10\sqrt{3}}{3}$

Answer: A

Question 4

To do a certain work, the ratio of efficiency of A to that of B is 3 : 7. Working together, they can complete the work in $10\frac{1}{2}$ days. They work together for 8 days. 60% of the remaining work will be completed by A alone in

A $5\frac{1}{2}$ days

B 5 days

C $6\frac{1}{2}$ days

D 4 days

Answer: B

Question 5

The average of thirteen numbers is 47. The average of the tirst three numbers is 39 and that of next seven numbers is 49. The 11^{th} number is two times the 12^{th} number and 12^{th} number is 3 less then the 13^{th} number. What is the average of 11^{th} and 13^{th} numbers?

A 54.5

B 57

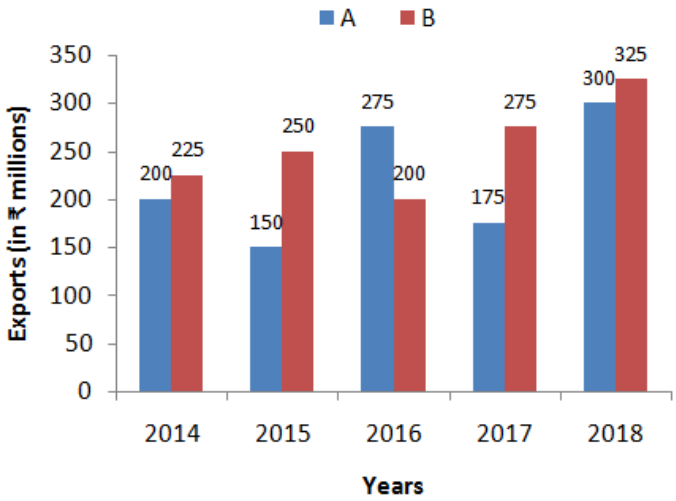
C 56

D 55.5

Answer: B

Question 6

The bar graph shows the exports of Cars of Type A and B (in ₹ millions).



What is the ratio of the total exports of cars of type A in 2014 and 2018 to the total exports of cars of type B in 2015 and 2016?

A 11 : 10

B 10 : 9

C 5 : 4

D 3 : 2

Answer: B

Question 7

If $x^8 - 1442x^4 + 1 = 0$, then possible value of $x - \frac{1}{x}$ is:

A 5

B 8

C 4

D 6

Answer: D

Question 8

The graphs of the equations $3x + y - 5 = 0$ and $2x - y - 5 = 0$ intersect at the point $P(\alpha, \beta)$. What is the value of $(3\alpha + \beta)$?

A 4

B -4

C 3

D 5

Answer: D

Question 9

If $\sqrt{86 - 60\sqrt{2}} = a - b\sqrt{2}$, then what will be the value of $\sqrt{a^2 + b^2}$, correct to one decimal place?

A 8.4

B 8.2

C 7.8

D 7.2

Answer: C

Question 10

The sides AB and AC of $\triangle$ABC are produced to P and Q respectively. The bisectors af $\angle$CBP and $\angle$BCQ meet at R. If the measure of $\angle$A is 44°, then what is the measure of, $\frac{1}{2}\angle$BOC ?

A 33°

B 38°

C 34°

D 32°

Answer: C

Question 11

In $\triangle ABC$, D is a point on side BC such that $\angle ADC = \angle BAC$. If CA = 12 cm, CB = 8 cm, then CD is equal to:

A 12 cm

B 15 cm

C 18 cm

D 16 cm

Answer: C

Question 12

A person marks his goods x% above the cost price and allows a discount of 30% on the marked price.If his profit is 5%. then the value of x will be:

A 50

B 60

C 45

D 35

Answer: A

Question 13

If $a^2 + b^2 + c^2 + 96 = 8(a + b - 2c)$, then $\sqrt{ab - bc + ca}$ is equal to:

A 6

B $2\sqrt{2}$

C 4

D $2\sqrt{3}$

Answer: C

Question 14

A right circular cylinder of maximum volume is cut out from a solid wooden cube. The material left is what percent of the volume (nearest to an integer) of the original cube?

A 19

B 28

C 23

D 21

Answer: D

Question 15

The ratio of the volumes of two cylinders is x : y and the ratio of their diameters is a : b, What is the ratio of their heights?

A $xb : ya$

B $xa : yb$

C $xb^2 : ya^2$

D $xa^2 : yb^2$

Answer: C

Question 16

The value of the expression $(\cos^6\theta + \sin^6\theta - 1)(\tan^2\theta + \cot^2\theta + 2)$ **is:**

A 0

B -1

C -3

D 1

Answer: C

Question 17

If A is 28% more than B and C is 25% less than the sum of A and B. Then by what percent will C be more than A (correct to one decimal place)?

A 32.2%

B 28%

C 43%

D 33.6%

Answer: D

Question 18

A shopkeeper bought 120 quintals of wheat. 20% of it was sold al 25% less. Al what percent gain should he sell the rest to gain 25% on the whole transaction?

A $36\frac{1}{2}$

B 40

C $37\frac{1}{2}$

D 35

Answer: C

Question 19

The value of $22.4 + 11.567 - 33.59$ is:

A 0.32

B 0.412

C 0.31

D 0.412

Answer: D

Question 20

Anu sold an article for ₹480 at some profit. Had she sold it for ₹400, then there would have been a loss equal to onethird of the initial profit. What was the cost price of the article ?

A ₹450

B ₹430

C ₹425

D ₹420

Answer: D

Question 21

Ina school, $\frac{4}{9}$ of the numberof students are girls and the rest are boys. $\frac{3}{5}$ of the number of boys are below 12 years of age and $\frac{5}{12}$ of the number of girls are 12 years or above 12 years of age.

If the number of students below 12 years of age is 480, then $\frac{5}{18}$ of the total number of students in the school will be equal to:

A 270

B 315

C 225

D 240

Answer: C

Question 22

$\frac{(2\sin A)(1+\sin A)}{1+\sin A+\cos A}$ **is equal to:**

A $1 + \sin A - \cos A$

B $1 - \sin A \cos A$

C $1 + \cos A - \sin A$

D $1 + \sin A \cos A$

Answer: A

Question 23

A and B can do a piece of work in 6 days and 8 days, respectively. With the help of C, they completed the work in 3 days and earned ₹1,848. What was the share of C ?

A ₹231

B ₹924

C ₹462

D ₹693

Answer: A

Question 24

If $x + y + z = 11, x^2 + y^2 + z^2 = 133$ **and** $x^3 + y^3 + z^3 = 881$**, then the value of** $\sqrt[3]{xyz}$ **is:**

A -6

B 6

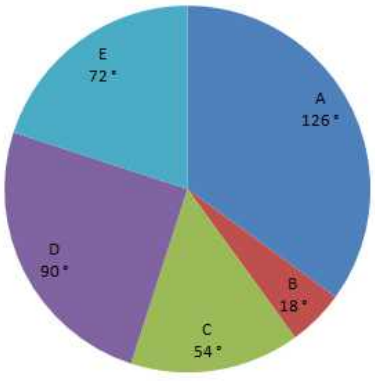
C -8

D 8

Answer: A

Question 25

The given pie chart shows the breakup of total number of the employees of a company working in different offices (A, B, C, D and E). Total No. of employees = 2400



What is the number of offices in which the number of employees of the company is between 350 and 650?

A 1

B 4

C 2

D 3

Answer: D

Question 26

Pipes A, B and C can fill a tank in 30 h, 40 h and 60 h respectively. Pipes A, B and C are opened at 7 a.m., 8 a.m., and 10 a.m., respectively on the same day. When will the tank be full?

A 10.00 p.m.

B 10.20 p.m.

C 9.20 p.m.

D 9.40 p.m.

Answer: C

Question 27

If the radius of a right circular cylinder is decreased by 20% while its height is increased by 40%, then the percentage change in its volume will be:

A 1.04% increase

B 10.4% decrease

C No increase or decrease

D 10.4% increase

Answer: B

Question 28

The number of students in a class is 75, out of which $33\frac{1}{3}\%$ are boys and the rest are girls. The average score in mathematics of the boys is $66\frac{2}{3}\%$ more than that of the girls. If the average score of all the students is 66, then the average score of the girls is:

A 52

B 55

C 54

D 58

Answer: C

Question 29

A shopkeeper allows 28% discount on the marked price of an article and still makes a profit of 20%. If he gains ₹30.80 on the sale of one article, then what will be the cost price of the article?

A ₹164

B ₹145

C ₹160

D ₹154

Answer: D

Question 30

In $\triangle ABC, \angle A = 52^\circ$ and O is the orthocenter of the triangle (BO and CO meet AC and AB at E and F respectively when produced). If the bisectors of $\angle OBC$ and $\angle OCB$ meetat P, then the measure of $\angle BPC$ is:

A 124°

B 132°

C 138°

D 154°

Answer: D

Question 31

Let a, b and c be the fractions such that $a < b < c$. If c is divided by a, the result is $2\frac{5}{2}$, Which exceeds b by $\frac{7}{4}$. If $a + b + c = 1\frac{11}{2}$, then $(c - a)$ will be equal to:

A $\frac{1}{3}$

B $\frac{2}{3}$

C $\frac{1}{6}$

D $\frac{1}{2}$

Answer: D

Question 32

The value of $\frac{(253)^3+(247)^3}{25.3\times25.3-624.91+24.7\times24.7}$ is 50×10^k, where the value of k is:

A 3

B 4

C 2

D -3

Answer: A

Question 33

Travelling at 60 km/h, a person reaches his destination in a certain time. He covers 60% of his journey in $\frac{2}{5}th$ of the time. At what speed (in km/h) should he travel to cover the remaining journey so that he reaches the destination right on time?

A 40

B 48

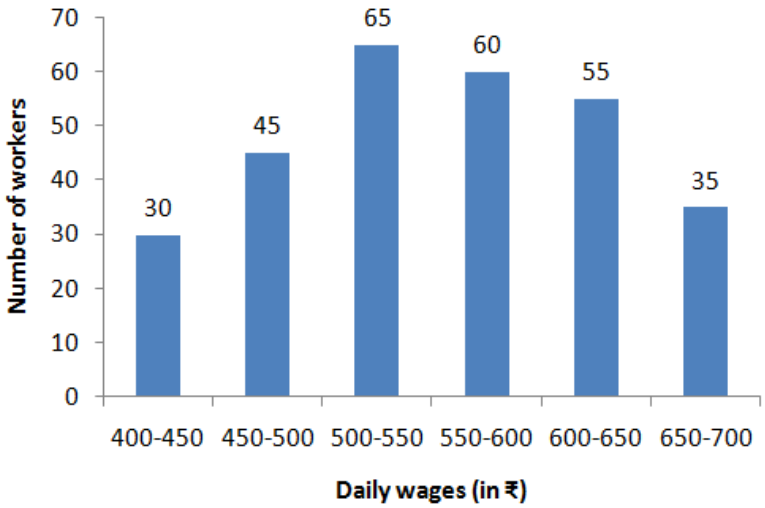
C 42

D 36

Answer: A

Question 34

Study the graph and answer the question that follows.



What is the ratio of the total number of workers whose daily wages are less than $500 to the total number of workers whose daily wages are ₹600 and above?

A $5:6$

B $6:7$

C $3:4$

D $15:11$

Answer: A

Question 35

The value of $\frac{(\cos 9^\circ+\sin 81^\circ)(\sec 9^\circ+\operatorname{cosec} 81^\circ)}{\sin 56^\circ sec34^\circ+\cos 25^\circ \operatorname{cosec} 65^\circ}$ **is:**

A 4

B $\frac{1}{2}$

C 2

D $\frac{1}{4}$

Answer: C

Question 36

If $\left(\sqrt{2}+\sqrt{5}-\sqrt{3}\right) \times k=-12$ **then what will be the value of** k**?**

A $\left(\sqrt{2}+\sqrt{5}+\sqrt{3}\right)$

B $\left(\sqrt{2}+\sqrt{5}+\sqrt{3}\right)\left(2-\sqrt{10}\right)$

C $\left(\sqrt{2}+\sqrt{5}-\sqrt{3}\right)\left(2+\sqrt{5}\right)$

D $\left(\sqrt{2}+\sqrt{5}+\sqrt{3}\right)\left(2-\sqrt{5}\right)$

Answer: B

Question 37

If θ lies in the first quadrant and $\cos^2\theta - \sin^2\theta = \frac{1}{2}$, then the value of $\tan^2 2\theta + \sin^2 3\theta$ is:

A $\frac{7}{2}$

B 3

C 4

D $\frac{4}{3}$

Answer: C

Question 38

A sum of ₹18,000 is lent at 10% p.a. compound interest. compounded annually. What is the difference between the compound interest for 3^{rd} year and 4^{th} year?

A ₹220.60

B ₹217.80

C ₹221.80

D ₹215.40

Answer: B

Question 39

What is the value of

$\operatorname{cosec}(65^\circ+\theta) - \sec(25^\circ-\theta) + \tan^2 20^\circ - \operatorname{cosec}^2 70^\circ$ **?**

A 0

B 1

C 2

D -1

Answer: D

Question 40

The ratio of the income of A to that of B is 5 : 7. A and B save ₹4,000 and ₹5,000 respectively. If the expenditure of A is equal to $66\frac{2}{3}\%$ of the expenditure of B, then the total income of A and B is:

A ₹25,200

B ₹24,000

C ₹26,400

D ₹28,800

Answer: B

Question 41

In $\triangle ABC, AB = 6cm, AC = 8cm$, and $BC = 9cm$. The length of median AD is:

A $\frac{\sqrt{317}}{2}$ cm

B $\frac{\sqrt{119}}{2}$ cm

C $\frac{\sqrt{313}}{2}$ cm

D $\frac{\sqrt{115}}{2}$ cm

Answer: B

Question 42

If a nine-digit number 389 x 6378 y is divisible by 72, then the value of $\sqrt{6x + 7y}$ will be:

A 6

B $\sqrt{13}$

C $\sqrt{46}$

D 8

Answer: D

Question 43

$\frac{(1+\cos\theta)^2+\sin^2\theta}{(\text{coec}^2\theta-1)\sin^2\theta} =$

A $\cos\theta\,(1 + \sin\theta)$

B $2\cos\theta\,(1 + \sec\theta)$

C $\sec\theta\,(1 + \sin\theta)$

D $2\sec\theta\,(1 + \sec\theta)$

Answer: D

Question 44

When 12, 16, 18, 20 and 25 divide the least number x, the remainder in each case is 4 but x is divisible by 7. What is the digit at the thousands' place in x ?

A 5

B 8

C 4

D 3

Answer: B

Question 45

If $(a+b):(b+c):(c+a)=7:6:5$ and $a+b+c=27$, then what will be the value of $\frac{1}{a}:\frac{1}{b}:\frac{1}{c}$?

A $3:6:4$

B $3:2:4$

C $4:3:6$

D $3:4:2$

Answer: C

Question 46

PQRS is a cyclic quadrilateral in which PQ = 14.4 cm, QR = 12.8 cm and SR = 9.6 cm. If PR bisects QS, whatis the length of PS?

A 15.8 cm

B 16.4 cm

C 13.6 cm

D 19.2 cm

Answer: D

Question 47

In what ratio, sugar costing ₹60 per kg be mixed with sugar costing ₹42 per kg such that byselling the mixture at ₹56 per kg there is a gain of 12%?

A 5 : 6

B 8 : 9

C 4 : 5

D 5 : 7

Answer: C

Question 48

When an article is sold for ₹355, there is a loss of 29%. To gain 21%,it should be sold for ₹:

A 629.20

B 580.80

C 605

D 635

Answer: C

Question 49

$\left(\frac{1-\tan\theta}{1-\cot\theta}\right)^2 + 1 =$

A $\operatorname{cosec}^2\theta$

B $\sec^2\theta$

C $\sin^2\theta$

D $\cos^2\theta$

Answer: B

Question 50

$\sqrt{\frac{\cot\theta+\cos\theta}{\cot\theta-\cos\theta}}$ **is equal to:**

A $\sec\theta + \tan\theta$

B $1 + \sec\theta\tan\theta$

C $1 - \sec\theta\tan\theta$

D $\sec\theta - \tan\theta$

Answer: A

Question 51

If $5\sin\theta - 4\cos\theta = 0, 0^\circ < \theta < 90^\circ$**, then the value of** $\frac{5\sin\theta-2\cos\theta}{5\sin\theta+3\cos\theta}$ **is:**

A $\frac{3}{8}$

B $\frac{3}{7}$

C $\frac{2}{7}$

D $\frac{5}{8}$

Answer: C

Question 52

If the radius of the base of a cone is doubled, and the volume of the new cone is three times the volume of the original cone, then what will be the ratio of the height of the original cone to that of the new cone?

A 1 : 3

B 4 : 3

C 2 : 9

D 9 : 4

Answer: B

Question 53

Abhi rows upstream a distance of 28 km in 4 h and rows downstream a distance of 50 km in 2 h. To row a distance of 44.8 km in still water, he will take:

A 2.8 h

B 3.2 h

C 2.4 h

D 2.2 h

Answer: A

Question 54

A sum of ₹8,400 amounts to ₹11,046 at 8.75% p.a. simple interest in certain time. What is the simple interest on the sum of ₹9,600 at the same rate for the same time?

A ₹2,990

B ₹3,012

C ₹2,686

D ₹3,024

Answer: D

Question 55

If the diameter of the base of a cone is 42 cm andits curved surface area is 2310 cm^2**, then what will be its volume (in** cm^3**) ?**

A 25872

B 19404

C 12936

D 38808

Answer: C

Question 56

If a cuboid of dimensions 32 cm $\times$ **12 cm** $\times$ **9 cm is cut into two cubes of same size, what will be the ratio of the surface area of the cuboid to the total surface area of the two cubes?**

A $65 : 72$

B $37 : 48$

C $24 : 35$

D $32 : 39$

Answer: A

Question 57

When x is added to each of 2, 3, 30 and 35, then the numbers obtained in this order, are in proportion. What is the mean proportional between (x + 7) and (x - 2)?

A 7

B 4

C 6

D 5

Answer: C

Question 58

The ratio of investment by A to that by B in a business is 14 : 15 and the ratio of their respective profits at the end of a year is 2 : 5. IfA invested the money for 3 months, then for how much time (in months) B invested his money?

A 7

B 6

C 5

D 9

Answer: A

Question 59

In $\triangle ABC, AB = 7cm, BC = 10cm,$ **and** $AC = 8cm.$ **If** AD **is the angle bisector of** $\angle BAC$**, where** D **is a point on** BC**, then** BD **is equal to:**

A $\frac{16}{3}\ cm$

B $\frac{15}{4}\ cm$

C $\frac{14}{3}\ cm$

D $\frac{17}{4}\ cm$

Answer: C

Question 60

The base of right prism is a trapezium whose parallel sides are 11 cm and 15 cm and the distance between them is 9 cm. If the volume of the prism is 1731.6 cm^3, then the height(in cm) of the prism will be:

A 15.6

B 15.2

C 14.8

D 14.2

Answer: C

Question 61

Raghav spends 80% of his income. If his income increases by 12% and the savings decrease by 10%, then what will be the percentage increase in his expenditure?

A 20.5

B 16

C 17.5

D 22

Answer: C

Question 62

The lateral surface area of a cylinder is 352 cm ^{2}. If its height is 7 cm, then its volume(in cm ^{3}) is: (Take $\pi = \frac{22}{7}$)

A 1408

B 1078

C 1243

D 891

Answer: A

Question 63

What will be the compound interest on a sum of ₹31,250 for 2 years at 12% p.a., if the interest is compounded 8-monthly?

A ₹8,106

B ₹8,116

C ₹8,016

D ₹8,156

Answer: B

Question 64

When 7897, 8110 and 8536 are divided by the greatest number x, then the remainder in each case is the same. The sum of the digits of x is:

A 14

B 5

C 9

D 6

Answer: D

Question 65

The ratios of copper to zinc in alloys A and B are 3 : 4 and 5 : 9, respectively. A and B are taken in the ratio 2 : 3 and melted to form a newalloy C. Whatis the ratio of copperto zine in C?

A 8 : 13

B 3 : 5

C 9 : 11

D 27 : 43

Answer: D

Question 66

In △ABC, D and E are the points on sides AB and BC respectively such that DE ∥ AC. If AD : DB = 5 : 3, then what is the ratio of the area of △BDE to that of the trapezium ACED?

A 4 : 25

B 9 : 55

C 9 : 64

D 1 : 6

Answer: B

Question 67

One year ago, the ratio of the age (in years) ofA to that of B was4 : 3. The ratio of their respective ages, 3 years from now,will be 6 : 5. What will be the ratio of respective ages of A and B, 9 years from now?

A 7 : 6

B 10 : 9

C 9 : 8

D 8 : 7

Answer: C

Question 68

The sides of a triangle are 11 cm, 60 cm and 61 cm. What is the radius of the circle circumscribing the triangle?

A 31.5 cm

B 31 cm

C 30 cm

D 30.5 cm

Answer: D

Question 69

Asum of ₹5,000 is divided into two parts such that the simple interest on the first part for $4\frac{1}{5}$ years at $6\frac{2}{3}\%$ p.a is double the simple interest on the second part for $2\frac{3}{4}$ years at 4% p.a. What is the difference between the two parts?

A ₹680

B ₹600

C ₹560

D ₹620

Answer: B

Question 70

If $x = \sqrt{1+\frac{\sqrt{3}}{2}} - \sqrt{1-\frac{\sqrt{3}}{2}}$, then the value of $\frac{\sqrt{2}-x}{\sqrt{2}+x}$ will be closest to:

A 0.17

B 0.12

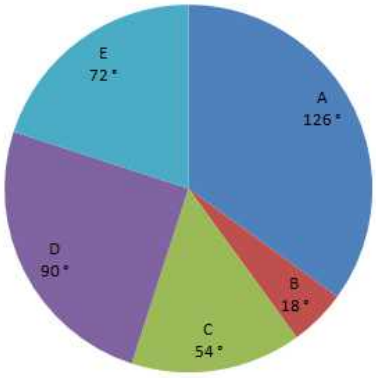
C 1.4

D 1.2

Answer: A

Question 71

The given pie chart shows the breakup of total number of the employees of a company working in different offices (A, B, C, D and E).
Total No. of employees = 2400



If the percentage of male employees in office C is 20% and that of female employees in E is 40%, then what is the ratio of the number of female employees in C to that of female employees in E?

A 3 : 2

B 5 : 4

C 2 : 3

D 3 : 8

Answer: A

Question 72

In a trapezium ABCD, DC ‖ AB , AB = 12 cm and DC = 7.2 cm. What is the length of the line segment joining the midpoints of its diagonals?

A 2.6 cm

B 4.8 cm

C 2.4 cm

D 3.6 cm

Answer: C

Question 73

A number is first increased by 16% and then increased by 14%. The number, so obtained, is now decreased by 30%. What is the net increase or decrease percent in the original number(nearest to an integer)?

A 6% increase

B 7% decrease

C No increase or decrease

D 9% decrease

Answer: B

Question 74

Radha marks her goods 25% above the cost price. She sells 35% of goods at the marked price, 40% at 15% discount and the remaining at 20% discount. What is her overall percentage gain?

A 11.25

B 10

C 11.75

D 12.75

Answer: A

Question 75

Chord AB of a circle is produced to a point P, and is a point onthe circle such that PC is a tangent to the circle. If PC = 18 cm, and BP = 15 cm, then AB is equal to:

A 5.8 cm

B 6.2 cm

C 6.6 cm

D 8.5 cm

Answer: C

Question 76

One of the factors of $(8^{2k} + 5^{2k})$, where k is an odd number, is:

A 86

B 88

C 84

D 89

Answer: D

Question 77

The internal and external radii of a hollow hemispherical vessel are 6 cm and 7 cm respectively. What is the total surface area (in cm^2 of the vessel?

A 183 π

B 189 π

C 177 π

D 174 π

Answer: A

Question 78

When the price of an item was reduced by 25%, then its sale was increased by x% . If there is an increase of 20% in the receipt of the revenue, then the value of x will be:

A 50

B 60

C 45

D 75

Answer: B

Question 79

In a constituency, 55% of the total number of voters are males and the rest are females. If 40% of the males are illiterate and 40% of the females are literate, then by what percent is the number of literate males more than that of illiterate females?

A $22\frac{8}{11}$

B $18\frac{2}{9}$

C $22\frac{2}{9}$

D $18\frac{2}{11}$

Answer: C

Question 80

From the top of a tower, the angles of depression of two objects on the ground on the same side of it, are observed to be 60° and 30° respectively and the distance between the objects is $400\sqrt{3}$ m. The height (in m) of the tower is:

A 800

B 800 $\sqrt{3}$

C 600

D 600 $\sqrt{3}$

Answer: C

Question 81

A train travelling at the speed of x km/h crossed a 200 m long platform in 30 seconds and overtook a man walking in the same direction at the speed of 6 km/h in 20 seconds. What is the value of x ?

A 50

B 54

C 56

D 60

Answer: D

Question 82

Let $x = (633)^{24} - (277)^{38} + (266)^{54}$. What is the units digit of x ?

A 7

B 6

C 4

D 8

Answer: D

Question 83

Three solid metallic spheres whose radii are 1 cm, X cm and 8 cm, are melted and recast into a single solid sphere of diameter 18 cm. The surface area (in cm^2) of the sphere with radius x cm is:

A 144 π

B 72 π

C 64 π

D 100 π

Answer: A

Question 84

The value of $\left(2\frac{6}{7} of 4\frac{1}{5} \div \frac{2}{3}\right) \times 1\frac{1}{9} \div \left(\frac{3}{4} \times 2\frac{2}{3} of \frac{1}{2} \div \frac{1}{4}\right)$ is:

A 5

B 8

C $\frac{1}{8}$

D $\frac{1}{5}$

Answer: A

Question 85

An article is sold at a certain price. If it is sold at $33\frac{1}{3}\%$ of this price, there is a loss of $33\frac{1}{3}\%$ What is the percentage profit whenit is sold at 60% of the original selling price?

A 20

B 30

C $33\frac{1}{3}$

D $17\frac{1}{3}$

Answer: A

Question 86

If $a^3 + b^3 = 218$ and $a + b = 2$, then the value of ab is:

A 34

B -35

C -31

D 32

Answer: B

Question 87

In $\triangle ABC, \angle A = 58^\circ$. If I is the in center of the triangle, then the measure of $\angle BIC$ is:

A 109°

B 123°

C 112°

D 119°

Answer: D

Question 88

If $2\sqrt{2}x^3 - 3\sqrt{3}y^3 = \left(\sqrt{2}x - \sqrt{3}y\right)\left(Ax^2 + By^2 + Cxy\right)$, then the value of $A^2 + B^2 - C^2$ is:

A 11

B 7

C 19

D 10

Answer: B

Question 89

A circle is inscribed in $\triangle ABC$, touching AB, BC and AC at the points P, Q and respectively. If AB - BC = 4 cm, AB - AC = 2 cm and the perimeter of $\triangle ABC$ = 32 cm, then PB + AR is equal to:

A 12 cm

B 13 cm

C $\frac{33}{5}$ cm

D $\frac{38}{3}$ cm

Answer: D

Question 90

Tf eachinterior angle of a regular polygonis $\left(128\frac{4}{7}\right)^\circ$, then what is the sum of the number of its diagonals and the number of its sides?

A 15

B 19

C 17

D 21

Answer: D

Question 91

If the radius of a sphereis increased by 4 cm, its surface areais increased by $464\pi cm^2$. What is the volume(in cm^3) of the original sphere?

A $\frac{15625}{6}\pi$

B $\frac{35937}{8}\pi$

C $\frac{11979}{2}\pi$

D $\frac{15625}{8}\pi$

Answer: A

Question 92

The sum of the digits of a two-digit number is $\frac{1}{7}$ of the number. The units digit is 4 less than the tens digit. If the number obtained on reversing its digits is divided by 7, the remainder will be:

A 4

B 5

C 1

D 6

Answer: D

Question 93

The graph of the equation x — 7y = —42, intersects the y-axis at $P(\alpha, \beta)$ and the graph of 6x + y - 15 = 0, intersects the x-axis at $Q(\gamma, \delta)$, What is the value of $\alpha + \beta + \gamma + \delta$?

A $\frac{17}{2}$

B 6

C $\frac{9}{2}$

D 5

Answer: A

Question 94

In quadrilateral $ABCD$, the bisectors of $\angle A$ and $\angle B$ meet at O and $\angle AOB = 64°. \angle C + \angle D$ is equal to:

A $136°$

B $128°$

C $116°$

D $148°$

Answer: B

Question 95

'A'started a business with a capital of ₹54,000 and admitted 'B' and 'C' after 4 months and 6 months, respectively. At the end of the year, the profit was divided in the ratio 1 : 4 : 5. What is the difference between the capitals invested by 'B' and 'C'?

A ₹1,08,000

B ₹1,62,000

C ₹2,16,000

D ₹3,24,000

Answer: C

Question 96

A and B started their journeys from X to Y and Y to X, respectively. After crossing each other, A and B completed the remaining parts of their journeys in $6\frac{1}{8}$ h and 8 h respectively. If the speed of B is 28 km/h, then the speed (in km/h) of A is:

A 40

B 42

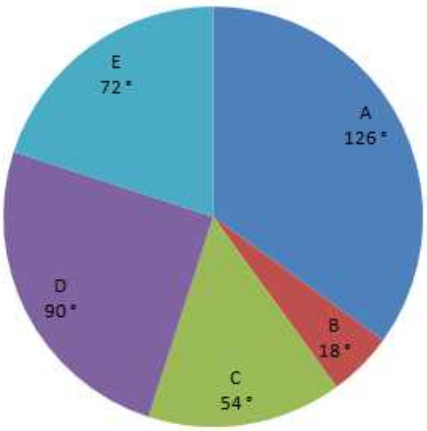
C 32

D 36

Answer: C

Question 97

The given pie chart shows the breakup of total number of the employees of a company working in different offices (A,B, C, D and E). Total No. of employees = 2400



If 40% of the number of employees in office A are shifted equally to office B and E, then what is the difference between the number of employees in B and that in C?

A 72

B 120

C 82

D 130

Answer: A

Question 98

The volume of a right pyramid is $45\sqrt{3}cm^3$ and its base is an equilateral triangle with side 6 cm. What is the height(in cm)of the pyramid?

A 15

B 18

C 12

D 20

Answer: A

Question 99

A certain numberof persons can complete a work in 34 days working 9 h a day. If the number of persons is decreased by 40%, then how many hours a day should the remaining persons work to complete the work in 51 days?

A 9

B 8

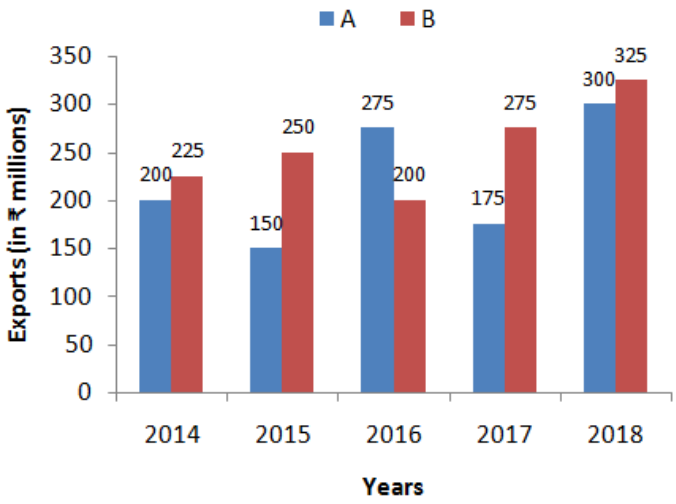
C 12

D 10

Answer: D

Question 100

The bar graph shows the exports of Cars of Type A and B (in ₹ millions).



The total exports of cars of type A in 2014 to 2017 is approximately what percentage less than the total exports of cars of type B in 2015 to 2018?

A 31.3

B 30.4

C 14.3

D 23.8

Answer: D